

### REMARKS

This application has been carefully reviewed in light of the final Office Action dated September 11, 2007. Claims 2, 4, 6 to 10, and 12 to 24 are in the application, of which claims 4, 6, 7, and 15 are the independent claims. Claims 4, 6 and 15 have been amended herein. Since support for the substance of the amendments is found throughout the disclosure, including at least paragraph [0094] of the specification and FIGS. 5 and 6, no new matter is believed to have been added. Reconsideration and further examination are respectfully requested.

Initially, the Examiner's indication that claims 7 and 8 are allowed is acknowledged with appreciation.

Furthermore, the Applicants' undersigned representative thanks Examiner Chow and Supervisory Examiner Mengistu for the thoughtful courtesies and kind treatment afforded during the personal interview conducted on November 20, 2007. In the Interview, the Applicants' representative described how the applied references were not seen to disclose the "counting unit" features, as recited by the independent claims. At the conclusion of the Interview, the Examiner agreed that the applied references did not teach the feature of a "fixed pulse-width." Having incorporated the substance of this feature into the rejected independent claims, the Applicants respectfully request an indication of allowance for all claims.

In the Office Action, claims 2, 4, 6, 9, 10, 12 to 14 and 21 to 24 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,515,390 ("Benton") in view of U.S. Patent No. 5,453,668 ("Chow"); and claims 15 to 20 were rejected under 35 U.S.C. § 103(a) over Benton in view of U.S. Patent No. 6,005,538 ("Hoekstra"). Withdrawal of the § 103 rejections and further examination are respectfully requested.

Independent claim 4 recites, *inter alia*, a driving circuit for a vacuum fluorescent display, including a counting unit configured to count the *number of fixed-width pulses per predetermined time period* of a pulse voltage for pulse-driving a filament of the vacuum fluorescent display. The applied references are not seen to disclose, teach, or to suggest such a feature.

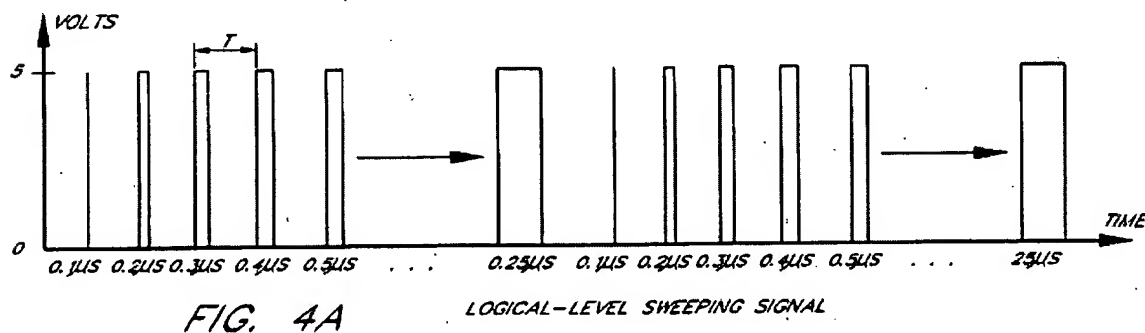
Benton discloses an apparatus for and method of detecting errors in an electro-optic

display. *See* Benton, Abstract. The Applicants concur with the Examiner's assessment that:

However, Benton does not teach a counting unit configured to count the number of pulses per predetermined time period of a pulse voltage for pulse-driving a filament of the vacuum fluorescent display.

*See* Office Action, pg. 2.

Chow is not seen to remedy the deficiencies of Benton. In particular, Chow discloses a sweeping signal generator that utilizes an 8-bit counter 510. *See* Chow, col. 7, ll. 44; FIG. 6; and Abstract. To generate a single pulse, an 8-bit data value between  $0_{16}$  and  $FF_{16}$  is written to the 8-bit counter 510. *See* Chow, col. 7, ll. 46 to 48. "The value loaded into the 8-bit counter 510 determines the amount of time the counter counts up before reaching a count  $FF_{16}$ , and thus determines the width of the pulse generated at the output of the tri-state buffer 520." Chow, col. 7, ll. 64 to 67 (**emphasis added**). Thus, "[s]equences of pulses of **increasing pulse-width** similar to those shown in FIG. 4A can thus be generated by loading the counter 510 with an initial count value... and by decrementing the initial count value..." Chow, col. 8, ll. 4 to 8. Thus, as shown in FIG. 4A of Chow (reproduced below), the counter 510 is used for the generation of variable-width pulses, and is not seen to count the number of **fixed-width** pulses per predetermined time period, as recited by independent claim 4.



Accordingly, Chow is not seen to disclose at least the feature of including a counting unit configured to count the *number of fixed-width pulses per predetermined time period* of a pulse voltage for pulse-driving a filament of the vacuum fluorescent display.

Independent claim 6 recites, *inter alia*, a counting unit configured to count a time period for which the level of a DC voltage produced by integrating a pulse voltage for pulse-driving a filament of the vacuum fluorescent display, shifts to the level indicating that the level of the pulse voltage is fixed, the pulse voltage for pulse-driving the filament comprising, in a normal state, **fixed-width pulses**.

Notably, although the Office Action posits that claim 6 stands rejected by Benton in view of Chow, nowhere is the Office Action seen to support the rejection by indicating with specificity that either Benton or Chow describe the feature of a counting unit configured to count a time period for which the level of a DC voltage produced by integrating a pulse voltage for pulse-driving a filament of the vacuum fluorescent display, shifts to the level indicating that the level of the pulse voltage is fixed. Indeed, it appears that only claim 4 and the claims that depend on claims 4 and 6, but not claim 6 itself, actually stand rejected.

Nevertheless, in a genuine effort to advance prosecution, independent claim 6 has been amended to recite the feature that, in a normal state, the pulse voltage for pulse-driving the filament includes **fixed-width pulses**. As such, the Applicants believe that claim 6 is allowable for at least the same reasons noted above with respect to independent claim 4.

Independent claim 15 recites, *inter alia*, a detecting unit configured to output a detection signal indicating that the level of the pulse voltage is fixed, when detecting that the level of the pulse voltage is fixed, based on the number of **fixed-width pulses** per predetermined time period of the pulse voltage or on a DC voltage produced by integrating the pulse voltage.

Again, the Applicants concur with the Examiner's conclusion that:

However, Hoekstra's driving circuit does not teach a detection unit outputs a signal for notifying of an abnormal state of the pulse voltage.

*See Office Action, pg. 6.*

For the reasons noted above with respect to claims 4 and 6, Benton is not believed to remedy the deficiencies of Hoekstra. Thus, independent claim 15 is also believed to be allowable.

As noted above, a *prima facie* case of obviousness has not been shown. The other rejected claims in the application are each indicated as allowable or are each dependent on these independent claims and are thus believed to be allowable over the applied references for at least the same reasons. Because each claim is deemed to define additional aspects of the disclosure, however, the individual consideration of each claim on its own merits is respectfully requested.

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, objection, issue, or comment, including the Office Action's characterizations of the references, does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment or cancellation of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment or cancellation. Since the amendments made herein have been made solely in an effort to expedite advancement of this case, the Applicants reserve the right to prosecute the rejected claims in further prosecution of this or related applications.

No other matters being raised, it is believed that the entire application is fully in condition for allowance and such action is courteously solicited.

No fees are believed to be due at this time. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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